



City of Cleveland  
Justin M. Bibb, Mayor

Department of Finance  
Division of Purchases & Supplies  
601 Lakeside Avenue, Room 128  
Cleveland, Ohio 44114-1080  
216/664-2620 • Fax: 216/664-2177  
www.cleveland-oh.gov

March 18, 2024

### ADDENDUM 1

**BID TITLE: File No. 22-24 Voltage Switching Equipment**

**BID DUE: Wednesday, April 10, 2024 at 12 o'clock noon (Eastern Time)**

**Attention Bidders:**

We have been requested to issue the addendum for the following:

Please ensure that a copy of this addendum is included and returned with the bid specifications furnished to you by this office, as it will have the same force and effect as if it were part of the specifications originally issued.

1. Inform potential bidders that the bid opening date has been extended from Thursday, March 21, 2024 to Wednesday, April 10, 2024.
2. Notify potential bidders that the contract term and items to be procure under this bid has changed.
3. Provide to potential bidders revised Bid – Schedule of Items pages (No. 1 through 5), and revised Section's C – Supplemental General Conditions and D – Detailed Specifications, all of which are labeled "Addendum No. 1". The pages provided in this Addendum are to replace those pages originally received in the bid package. Failure to submit your bid response with the proper documents will result in your bid being deemed as non-responsive.
4. Address question received from potential bidder with regards to the bid specifications.

If you have any questions regarding the attached, please contact Simon Mastroianni at 216-664-2444, extension 75630. Thank you for your prompt attention and assistance in this matter.

\_\_\_\_\_  
Signature of Potential Bidder & Name of Company

\_\_\_\_\_  
Today's Date

Thank you,  
  
Donia Patterson, Assistant Administrator  
Purchases & Supplies  
CC:  
Attachments

**High Voltage Switching Equipment  
File No. 22-24**

**ADDENDUM NO. 1**

Question: Bidder submitted a list of exceptions to Cleveland Public Power's Detailed Specifications for items listed under this contract for the City's approval (see attachment).

Answer: Cleveland Public Power found the exceptions taken by this bidder acceptable, and that bidders are free to bid solid- dielectric's for this bid as well.

Question: Bidder requested the term of the contract be revised from a two-year to a one-year term.

Answer: Cleveland Public Power has agreed to change the term of the contract to one (1) year. Pricing for the one- year term shall be firm.

**ADDENDUM NO. 1**

**HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

count	Eaton Device		CPP Bid	Description
	PST	ISG		
1			Section	Description
2	x		D.1	Proposed units will be 2-sided.
3		x	D.1.1.c	Eaton-ISG does not utilize any oil or SF6 gas so an oil valve is not needed
4		x	D.1.1.e	Eaton-ISG does not utilize any oil or SF6 gas so an oil valve is not needed
5	x	x	D.1.1.h	Proposed units will be painted Munsell Green
6		x	D.1.2.a.3	Eaton-ISG will provide 304L Stainless steel only
7	x	x	D.1.2.d	Eaton Switches have a mechanical life of 2000 operations.
8		x	D.1.2.e.2	Eaton-ISG can provide a 1 second transfer scheme; NOT 7 cycles
9		x	D.1.3.b	Eaton-ISG provides voltage sensing through external voltage sensors that piggy back off the 600A T-Body
10		x	D.1.3.e	Eaton-ISG requires PTs to provide control power for the control cabinet
11		x	D.1.5.f	Eaton-ISG requires PTs to provide control power for the control cabinet
12		x	D.1.7.a	Clarification: Eaton-ISG bushings are not removable
13		x	D.1.9.3	Eaton-ISG does not require replacement parts
14		x	D.1.10	Eaton-ISG is tested to IEEE standards C37.60 and C37.74 for UDS switchgear. Eaton-ISG provides a fully stainless-steel enclosure but has not been tested to C57.28 or 29.
15	x		D.2	Proposed units will be 2-sided.
16		x	D.2.1.c	Eaton-ISG does not utilize any oil or SF6 gas so an oil valve is not needed
17		x	D,2,1,e	Eaton-ISG does not utilize any oil or SF6 gas so an oil valve is not needed
18	x	x	D.2.1.h	Proposed units will be painted Munsell Green
19		x	D2.2.a.3	Eaton-ISG will provide 304L Stainless steel only
20	x	x	D.2.2.d	Switches have a mechanical life of 2000 operations.
21		x	D.2.2.e.2	Eaton-ISG can provide a 1 second transfer scheme; NOT 7 cycles
22		x	D.2.3.a.3	Eaton-ISG does not provide external operation counters
23		x	D.2.4.b	Clarification: Eaton-ISG provides voltage sensing through external voltage sensors that piggy back off the 600A T-Body
24		x	D.2.4.e	Eaton-ISG requires PTs to provide control power for the control cabinet
25		x	D.2.4.2.f	Eaton-ISG requires PTs to provide control power for the control cabinet
26		x	D.2.5.a	Clarification: Eaton-ISG bushings are not removable
27		x	D.2.7.3	Eaton-ISG does not require replacement parts
28	x		D.3.1	Proposed units will have cabinets with side-hinged swinging doors.
29	x		D.3.1.h	Proposed units will be painted Munsell Green.
30	x		D.3.2.d	Switches have a mechanical life of 2000 operations.
31	x		D.4	Submersible switchgear is not part of this proposal.
32	x		D.5	Submersible switchgear is not part of this proposal.
General exception - Eaton will not accept a long-term purchase of 2 years firm pricing.				

**Addendum No. 1**

**BID — SCHEDULE OF ITEMS**

City of Cleveland Division of Purchases and Supplies 128 City Hall Cleveland, Ohio 44114			BID PAGE 1 OF 4 BIDDER MUST COMPLETE AND SIGN BELOW			
TITLE OF BID			NAME OF FIRM			
<b>High Voltage Switching Equipment 2024</b>						
ORDINANCE NO.	PASSED:	SIGNED:	CITY	STATE	ZIP CODE	
1630-92, Sect. 129.26	September 21, 1992	September 25, 1992				
DEPARTMENT	DIVISION		AUTHORIZED SIGNATURE			
Public Utilities	Cleveland Public Power					
CITY RECORD ADVERTISEMENT DATES			STANDARD CONTRACT BID			
February 21, 2024 & February 28, 2024		X	REQUIREMENT CONTRACT BID			
BUYER :		BID OPENING: Wednesday, April 10, 2024		DATE:		
DIVISION OF PURCHASES & SUPPLIES 216-664-2620 PURCHASING@CLEVELANDOHIO.GOV		12:00 O'CLOCK NOON OFFICIAL TIME				
DESCRIPTION			QTY	UOM	UNIT PRICE	EXTENSION
<b>Group 1 - Automatic Transfer Switch (1-Tap) (1-Sided)</b>						
<b>Item 1-1</b> 12 kV, 600 A. Auto Transfer Switch, One-sided unit with single tap (load) as specified (Or Approved Equal) Manufacturer: Part Number:			2	EA	\$	\$
<b>Item 1-2</b> 13.8 kV, 600 A. Auto Transfer Switch, One-sided unit with single tap (load) as specified (Or Approved Equal) Manufacturer: Part Number:			2	EA	\$	\$
<b>Item 1-3</b> Spare Control Box for Auto Transfer Switch, One-sided unit with single tap (load) as specified Manufacturer: Part Number:			2	EA	\$	\$
<b>Total for Group 1</b>						\$
<b>Group 2 - Automatic Transfer Switch (1-Tap) (2-Sided)</b>						
<b>Item 2-1</b> 12 kV, 600 A. Auto Transfer Switch, Two-sided unit with single tap (load) as specified Manufacturer: Part Number:			2	EA	\$	\$
<b>Item 2-2</b> 13.8 kV, 600 A. Auto Transfer Switch, Two-sided unit with single tap (load) as specified Manufacturer: Part Number:			2	EA	\$	\$
<b>Item 2-3</b> Spare Control Box for Auto Transfer Switch, Two-sided unit the single tap (load) as specified Manufacturer: Part Number:			2	EA	\$	\$
<b>Total for Group 2</b>						\$
ALL QUANTITIES ARE APPROXIMATE. THE CONTRACT, IF ANY, SHALL BE FOR A PERIOD OF ONE (1) YEAR.			Delivery days		Payment Discount	
ALL OF THIS BOUND INFORMATION MUST BE KEPT INTACT AND TOGETHER WITH ANY ADDENDA ISSUED, MUST BE RETURNED WITH THE BID. OTHERWISE, THE BID MAY BE CONSIDERED INFORMAL			<b>FOR PURCHASING ONLY</b>			

**Addendum No. 1**

<b>BID — SCHEDULE OF ITEMS</b>				BID PAGE 2 OF 4			
City of Cleveland Division of Purchases And Supplies 128 City Hall Cleveland, Ohio 44114				BIDDER MUST SIGN AND DATE THIS SHEET			
TITLE OF BID  <b>High Voltage Switching Equipment 2024</b>				NAME OF FIRM			
				AUTHORIZED SIGNATURE			
DESCRIPTION				QTY	UOM	UNIT PRICE	EXTENSION
<b>Group 3 - Automatic Transfer Switch (2-Tap) (1-Sided)</b>							
<b>Item 3-1</b> 12 kV, 600 A. Auto Transfer Switch, One-sided unit with two-taps (load) as specified (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 3-2</b> 13.8 kV, 600 A. Auto Transfer Switch, One-sided unit with two-taps (loads) as specified (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Total for Group 3</b>							\$
<b>Group 4 - Automatic Transfer Switch (2-Tap) (2-Sided)</b>							
<b>Item 4-1</b> 12 kV, 600A. Auto Transfer Switch, Two-sided unit with two-taps (loads) as specified (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 4-2</b> 13.8 kV, 600 A. Auto Transfer Switch, Two-sided unit with two-tap (loads) as specified (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Total for Group 4</b>							\$
<b>Group 5 - Padmounted Switchgear</b>							
<b>Item 5-1</b> Padmounted Switchgear with Single Breaker Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 5-2</b> Padmounted Switchgear with Single Switch and Two Breakers Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 5-3</b> Padmounted Switchgear with Single Switch and Three Breakers Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 5-4</b> Padmounted Switchgear with Two Switches and Single Breaker Manufacturer: Part Number:				2	EA	\$	\$
ALL QUANTITIES ARE APPROXIMATE. THE CONTRACT, IF ANY, SHALL BE FOR A PERIOD OF ONE (1) YEAR.				Delivery days		Payment Discount	
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**Addendum No. 1**

<b>BID — SCHEDULE OF ITEMS</b>				BID PAGE 3 OF 4			
City of Cleveland Division of Purchases And Supplies 128 City Hall Cleveland, Ohio 44114				BIDDER MUST SIGN AND DATE THIS SHEET			
<b>TITLE OF BID</b> <b>High Voltage Switching Equipment 2024</b>				NAME OF FIRM			
				AUTHORIZED SIGNATURE			
<b>DESCRIPTION</b>				<b>QTY</b>	<b>UOM</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
				<b>Group 5 - Padmounted Switchgear cont.</b>			
<b>Item 5-5</b> Padmounted Switchgear with Three Switches Manufacturer: Part Number:				2	EA	\$	\$
<b>Total for Group 5</b>							\$
<b>Group 6 - Submersible 15 kV Transfer Switch</b>							
<b>Item 6-1</b> 200A. 13.8 kV, VACpac w/ Interrupter Cooper Catalog No. 33VP95-222-SIS (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 6-2</b> 600A. 12 kV, VACpac w/ Interrupter Cooper Catalog No. 33VP95-666-SIS (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Item 6-3</b> 600A. 13.8 kV, VACpac w/ Interrupter Cooper Catalog No. 33VP95-666-SIS (Or Approved Equal) Manufacturer: Part Number:				2	EA	\$	\$
<b>Total for Group 6</b>							\$
<b>Group 7 - Padmounted Switchgear Accessories</b>							
<b>Item 7-1</b> 600A. 15 kV Push-OP Deadbreak Connector for 4/0 AWG Cooper Catalog No. POP615E16TC (Or Approved Equal) Manufacturer: Part Number:				48	EA	\$	\$
<b>Item 7-2</b> 600A. 15 Kv Push-OP Deadbreak Connector for 500 AWG Cooper Catalog No. POP615G22TC (Or Approved Equal) Manufacturer: Part Number:				48	EA	\$	\$
<b>Item 7-3</b> 600A. 15 Kv Push-OP Deadbreak Connector for 750 AWG Cooper Catalog No. POP615H15TC (Or Approved Equal) Manufacturer: Part Number:				48	EA	\$	\$
ALL QUANTITIES ARE APPROXIMATE. THE CONTRACT, IF ANY, SHALL BE FOR A PERIOD OF ONE (1) YEAR.					Delivery days		Payment Discount
ALL OF THIS BOUND INFORMATION MUST BE KEPT INTACT AND TOGETHER WITH ANY ADDENDA ISSUED, MUST BE RETURNED WITH THE BID. OTHERWISE, THE BID MAY BE CONSIDERED INFORMAL					<b>FOR PURCHASING ONLY</b>		

**Addendum No. 1**

<b>BID -- SCHEDULE OF ITEMS</b>				BID PAGE 4 OF 4	
City of Cleveland Division of Purchases And Supplies 128 City Hall Cleveland, Ohio 44114				BIDDER MUST SIGN AND DATE THIS SHEET	
				NAME OF FIRM	
				AUTHORIZED SIGNATURE	
TITLE OF BID				DATE	
<b>High Voltage Switching Equipment 2024</b>					
DESCRIPTION	QTY	UOM	UNIT PRICE	EXTENSION	
<b>Group 7 - Padmounted Switchgear Accessories cont.</b>					
<b>Item 7-4</b> 600A. 15 Kv Push-OP Insulated Adapter Cap Cooper Catalog No. PDBA615 (Or Approved Equal) Manufacturer: Part Number:	48	EA	\$	\$	
<b>Item 7-5</b> 15 kV, Push-OP Standoff Bushing Cooper Catalog No. PISB625 (Or Approved Equal) Manufacturer: Part Number:	48	EA	\$	\$	
<b>Total for Group 7</b>					\$
<b>Group 8 - Switching Equipment</b>					
<b>Item 8-1 (CPP Item No. 377900)</b> Interrupter, Submersible, 15 kV, 1 Pole, 600A, W/ 200A Wells, Elastimold - #MVI1-21-15B-22-PS (Or Approved Equal) Manufacturer: Part Number:	3	EA	\$	\$	
<b>Item 8-2 (CPP Item No. 575001)</b> Switch, Submersible, 15.5 kV, 600A, 3 Phase, Elastimold - #MVS3-21-15A-66-PS6-T (Or Approved Equal) Manufacturer: Part Number:	3	EA	\$	\$	
<b>Item 8-3 (CPP Item No. 575000)</b> Interrupter, Submersible, 15 kV, 600A, 3 Phase, Elastimold - #MVI3-21-15A-66-PS6-T (Or Approved Equal) Manufacturer: Part Number:	3	EA	\$	\$	
ALL QUANTITIES ARE APPROXIMATE. THE CONTRACT, IF ANY, SHALL BE FOR A PERIOD OF ONE (1) YEAR1.			Delivery days		Payment Discount
ALL OF THIS BOUND INFORMATION MUST BE KEPT INTACT AND TOGETHER WITH ANY ADDENDA ISSUED, MUST BE RETURNED WITH THE BID. OTHERWISE, THE BID MAY BE CONSIDERED INFORMAL			<b>FOR PURCHASING ONLY</b>		

**SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – DIVISION OF CLEVELAND PUBLIC POWER**

**SECTION C – SUPPLEMENTAL GENERAL CONDITIONS**

**HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

**ADDENDUM NO. 1**

**C.1. SCOPE OF SERVICES**

This specification is to provide for one or more REQUIREMENT CONTRACT(s) to furnish and deliver to Cleveland Public Power various items of high voltage switching equipment as described in this specification and as listed in the Bid Schedule of Items pages. The type of high voltage switching equipment and any other Accessories that may be designated on the Bid Schedule of Items pages shall be designed, manufactured, and tested in accordance with applicable standards in effect at the time of the order. The Contract or contracts shall be for a period of One (1) year.

**C.2. CITY FORMS**

Failure to submit the following City forms properly **will** cause your bid to be non-responsive.

**A. Bid Bond**

1. Use the City's Bid Bond form.
2. Follow the instructions in Part B and C of the Bidder's Check List completely.
3. A bid bond is not required if your total bid is \$50,000.00 or less.

**B. Bid Form**

1. Indicate whether you are submitting a bid bond or a cashier's check/certified check in the amount of 5% of your bid total.
2. The information at the bottom of the page must be filled out completely and signed by an officer of the corporation or firm.

**C. Affidavit**

1. The first three lines of the affidavit must be filled out stating the state, county, and name of the person being sworn.
2. The state on page one must be the same state as the notary's commission stamp that appears at the bottom of page two.
3. Be sure that the proper lines are used on page two for signing for the person that is being sworn.
4. Fill out all necessary information on both sides of the affidavit.

Any other forms that are included in the bid package should also be filled out completely and signed where necessary and returned.



**SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – DIVISION OF CLEVELAND PUBLIC POWER**

**SECTION C – SUPPLEMENTAL GENERAL CONDITIONS**

**HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

**ADDENDUM NO. 1**

**C-3 NON-MANDATORY PRE-BID MEETING**

A. A pre-bid meeting will be held on the date and time as per the advertisement announcement. Bidders are cautioned that questions, clarifications, and information that may result from this meeting could affect your bid. In addition, by City policy, this is the only opportunity for potential bidders to speak directly with CPP personnel prior to the award of the contract. Attendance at the pre-bid meeting is non-mandatory.

B. The last day for questions is five (5) business days before the bid opening date. All questions must be submitted in writing to the Division of Purchasing & Supplies' attention, Email: [purchasing@clevelandohio.gov](mailto:purchasing@clevelandohio.gov), or via fax, 216-664-2177.

**C.4. QUANTITIES**

The quantities of work to be done, material, or equipment to be furnished as given for each item in the Bid Schedule of Items pages are approximate only. They are not guaranteed to be accurate statements and quantities to be performed or furnished under this contract, and any departure there from will not be considered as valid grounds for any claims for damage or for loss of profits. CPP reserves the right to procure more or less than shown under the terms of this requirement contract.

**C.5. UNIT PRICES**

All prices quoted shall be on a per unit basis as indicated on the Bid - Schedule of Items pages and shall include all costs for handling and delivery, F.O.B. point of delivery. The pricing for this contract shall be fixed for the One (1) year contract.

**C.6. METHOD OF AWARD**

The City reserves the right to award a single contract for all items, or by individual items, or by groups to the lowest and best bidder based on price, delivery time, discount offered and conformance to specifications as deemed advantageous after evaluation by the City. To receive an award based on groups, bidders must submit a bid for all items within the group.

## ADDENDUM NO. 1

**SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – CLEVELAND PUBLIC POWER**

**SECTION D – DETAILED SPECIFICATIONS**

**HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

**D.1 SINGLE TAP AUTOMATIC LOAD TRANSFER EQUIPMENT**

**(Groups 1+2)**

This equipment is to be used to transfer critical loads to alternate sources upon failure of the preferred source. The equipment is also to have the ability to interrupt faults occurring on the load side of the switch. The Padmounted equipment consists of a dead-front Padmounted enclosure, switching and control equipment to achieve the auto transfer and fault interrupting functions. Units designated single tap shall consist of two breakers to perform the switching and fault interrupting functions of the load transfer equipment. Group 1 covers one-sided units. Group 2 covers two-sided units.

**D.1.1. Construction**

- a. Enclosure to be preassembled and contain all necessary equipment. Unit is to be completely wired and require only the connection of incoming and outgoing cables.
- b. Padmounted enclosure constructed of heavy gauge 100% stainless steel, with provisions for lifting.
- c. Enclosure is to have tamper resistant hinged cabinet style doors and cover, secured with recessed penta-head bolts, with provisions for padlocking. Door hinge pins shall be constructed of stainless steel.
- d. The unit shall be supplied with an oil drain valve with sampling device, an oil fill plug and oil level indicators.
- e. A hotstick operable automatic pressure relief device shall be provided.
- f. A 0.5-inch copper ground bar shall be provided across the entire width of the cable compartments. A minimum of two ground pads shall also be provided.
- g. Equipment is to be completely dead-front with no exposed high voltage components.
- h. CPP to choose at the time of placing orders:
  1. Painted green to match padmounted transformers per ANSI C57.12.28
  2. or Un-painted (bare stainless steel) units

**D.1.2. Source Breakers**

- a. General
  1. Three phase, three pole device.
  2. Vacuum Interrupters.
  3. Mild steel construction.

**ADDENDUM NO. 1****SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – CLEVELAND PUBLIC POWER****SECTION D – DETAILED SPECIFICATIONS****HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

4. Stored energy, motor driven.
5. In compliance with ANSI C37.60

**b. Voltage Rating**

1. Nominal Voltage Class	14.4 kV rms
2. Rated Maximum Voltage	15.5 kV rms
3. Rated Impulse Withstand Voltage	95 kV crest
4. Low Freq. Withstand Voltage 1 min.	35 kV rms
5. DC 15 minute Withstand	53 kV rms
6. Corona Extinction Voltage @ 20 pc	11 kV rms

**c. Current Ratings**

1. Continuous Current	200 A.
	600 A.
2. Interrupting Current	12 kA.
3. Second Current (rms-sym.)	12 kA.
4. Magnetizing Interrupting Current	21 A.
5. Cable Charging Current	10 A

**d. Mechanical life greater than 2,500 operations.****e. Switching and Transfer Times**

1. Reaction Time	7 cycles (max.)
2. Transition Time	7 cycles (max.)

**D.1.3 Automatic Transfer Controls**

The controls shall have the following characteristics:

**a. Suitable for use on:**

1. 12 kV ungrounded system
2. 12 kV grounded wye system.
3. 13.8 kV grounded wye system.

b. Padmounted units shall be three phase voltage sensing on both preferred and alternate sources, through the use of fused VT's.

c. Current sensing shall be accomplished with bushing type current transformers.

d. Breakers shall have the capability of being manually operated from the control cabinet.

e. No external source of control power is to be required.

**ADDENDUM NO. 1****SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – CLEVELAND PUBLIC POWER****SECTION D – DETAILED SPECIFICATIONS****HIGH VOLTAGE SWITCHING EQUIPMENT 2024****D.1.4 Auto Transfer Control (ATC)**

The control shall be capable of automatically transferring critical loads from preferred to alternate sources upon loss of voltage to the preferred source. The control should also provide for the automatic return of the load from the alternate to the preferred source upon restoration of voltage on the preferred source.

The auto transfer control shall have the following characteristics:

- a. Separate adjustable time delays for source transfers.
- b. Type of transition on transfer back to the preferred source to be field selectable for either non-paralleled or paralleled transfer.
- c. Adjustable so that either source can be selected as the preferred source, and also adjustable so that neither source is preferred so that the load is not automatically transferred back to the preferred source upon restoration of voltage.
- d. The control should be capable of being tested without operating the transfer switches.
- e. Equipped with contacts that can be used to indicate position of switches, whether a source is energized, local/supervisory switch.
- f. Equipped with SCADA interface that allows for remote opening and closing of source switches.

**D.1.5 Fault Interruption**

The controls shall have the following characteristics:

- a. Phase and ground trip (minimum trip) settings shall be adjustable.
- b. Phase and ground instantaneous trip settings shall be adjustable.
- c. Selectable instantaneous and time overcurrent operating curves.
- d. Selectable time delay.
- e. Breakers shall have the capability of being manually operated.
- f. No external source of control power shall be required for protective functions.
- g. SCADA compatible via DNP over serial.

**ADDENDUM NO. 1****SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – CLEVELAND PUBLIC POWER****SECTION D – DETAILED SPECIFICATIONS****HIGH VOLTAGE SWITCHING EQUIPMENT 2024****D.1.6 Auxiliary Switches**

The source vacuum switches and VFIs shall be provided with two stage "a" and two stage "b" auxiliary switches for the purpose of remote indication of status. The auxiliary switches shall be linked to the movable contact rod of the vacuum switch/VFI and shall be internally pre-wired to a MIL C-5015 style circular power connector receptacle, mounted on the front plate. The receptacle shall be provided with a mating plug for user's cable termination. These auxiliary switches shall be rated for 15 amps @ 120 Vac / 1 amp @125 Vdc.

**D.1.7 Terminations**

15 kV, 600 A. dead-break Push-OP apparatus bushings per ANSI/ IEEE Std. 386™-2006 standard installed on both source and tap sides on 600 A. switches.

**D.1.8 Required Information**

Bidder shall furnish catalog cuts of equipment to be supplied along with model numbers and any modifications of standard equipment with bid package by bid-opening deadline.

**D.1.9 Instruction Books**

a. Three complete instructions books for each unit shall be supplied and shall include:

1. Detailed operating instructions.
2. Wiring schematics and assembly drawings.
3. A list of replacement parts.

b. Detailed schematic wiring and assembly drawings shall be supplied with each unit in the form of pdf files printable at 24" x 36".

c. Instruction manuals and drawings shall be sent/emailed to:

**Attn: Steve Chwalik**  
**Cleveland Public Power**  
**1300 Lakeside Avenue**  
**Cleveland, OH 44114**  
**sachwalik@cpp.org**

**D.1.10 Applicable Standards**

a. IEEE Std. C57.12.28™-2005 standard – Standard for Pad-Mounted Equipment - Enclosure Integrity.

b. IEEE Std. C57.12.29™-2005 standard – IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments – applicable when stainless steel construction is specified.

**ADDENDUM NO. 1****SPECIFICATIONS/DESCRIPTIONS OF PRODUCTS AND/OR SERVICES  
CITY OF CLEVELAND – CLEVELAND PUBLIC POWER****SECTION D – DETAILED SPECIFICATIONS****HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

- c. IEEE Std. 386™-2006 standard – Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V.
- d. IEEE Std. C37.90™-2005 standard – IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.
- e. IEEE Std. C37.90.2™-2004 standard – Standard for Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers.

**D.2 TWO-TAP AUTOMATIC LOAD TRANSFER EQUIPMENT (Groups 3 + 4)**

This equipment is to be used to transfer critical loads to alternate sources upon failure of the preferred source. The equipment is also to have the ability to interrupt faults occurring on the load side of the switch.

The padmounted equipment is to consist of a dead-front padmounted enclosure, switching and control equipment to achieve the auto transfer and fault interrupting functions. Units designated two-tap shall consist of two breakers to perform the switching and two interrupters to perform the fault interrupting functions of the load transfer equipment. Group 3 covers one-sided units. Group 4 covers two-sided units.

**D-2.1 Construction**

- a. Enclosure to be preassembled and contain all necessary equipment. Unit is to be completely wired and require only the connection of incoming and outgoing cables.
- b. Pad mounted enclosure constructed of heavy gauge 100% stainless steel, with provisions for lifting.
- c. Enclosure is to have tamper resistant hinged cabinet style doors and cover, secured with recessed penta-head bolts, with provisions for padlocking. Door hinge pins shall be constructed of stainless steel.
- d. The unit shall be supplied with an oil drain valve with sampling device, an oil fill plug and oil level indicators.
- e. A hotstick operable automatic pressure relief device shall be provided.
- f. A 0.5-inch copper ground bar shall be provided across the entire width of the cable compartments. A minimum of two ground pads shall also be provided.
- g. Equipment is to be completely dead-front with no exposed high voltage components.

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- h. CPP to choose at the time of placing orders:
1. Painted green to match padmounted transformers per ANSI C57.12.28
  2. or Un-painted (bare stainless steel) units

**D.2.2 Source Breakers****a. General**

1. Three phase, three pole device.
2. Vacuum Interrupters.
3. Mild steel construction.
4. Stored energy, motor driven.
5. In compliance with ANSI C37.60

**b. Voltage Rating**

- |                                       |             |
|---------------------------------------|-------------|
| 1. Nominal Voltage Class              | 14.4 kV rms |
| 2. Rated Maximum Voltage              | 15.5 kV rms |
| 3. Rated Impulse Withstand Voltage    | 95 kV crest |
| 4. Low Freq. Withstand Voltage 1 min. | 35 kV rms   |
| 5. DC 15 minute Withstand             | 53 kV rms   |
| 6. Corona Extinction Voltage @ 20 pc  | 11 kV rms   |

**c. Current Ratings**

- |                                     |        |
|-------------------------------------|--------|
| 1. Continuous Current               | 200 A. |
|                                     | 600 A. |
| 2. Interrupting Current             | 12 kA. |
| 3. 3-Second Current(rms-sym.)       | 12 kA. |
| 4. Magnetizing Interrupting Current | 21 A.  |
| 5. Cable Charging Current           | 10 A   |

**d. Mechanical life greater than 2,500 operations.****e. Switching and Transfer Times**

- |                    |                 |
|--------------------|-----------------|
| 1. Reaction Time   | 7 cycles (max.) |
| 2. Transition Time | 7 cycles (max.) |

**D.2.3 Tap Breakers****a. General**

1. Three phase, with three phase tripping.
2. Manually operable
3. Equipped with operations counter
4. Vacuum insulated
5. Mechanically trip free

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6. In compliance with ANSI C37.60

b. Ratings

1. Rated Continuous Current	600 A.
2. Rated Interrupting Current	12 kA.
3. Momentary and fault close rating (asym.)	20 kA.
4. Rated 3-Second Current (rms Sym.)	12 kA.

**D.2.4 Automatic Transfer Controls**

The controls shall have the following characteristics:

a. Suitable for use on:

1. 12 kV ungrounded system
2. 12 kV grounded wye system.
3. 13.8 kV grounded wye system.

b. Padmounted units shall be three phase voltage sensing on both preferred and alternate sources, through the use of fused VT's.

c. Current sensing shall be accomplished with bushing type current transformers.

d. Breakers shall have the capability of being manually operated from control cabinet.

e. No external source of control power is to be required.

**D.2.4.1 Auto Transfer Control (ATC)**

The control shall be capable of automatically transferring critical loads from preferred to alternate sources upon loss of voltage to the preferred source. The control should also provide for the automatic return of the load from the alternate to the preferred source upon restoration of voltage on the preferred source.

The auto transfer control shall have the following characteristics:

a. Separate adjustable time delays for source transfers.

b. Type of transition on transfer back to the preferred source to be field selectable for either non-paralleled or paralleled transfer.

c. Adjustable so that either source can be selected as the preferred source, and also adjustable so that neither source is preferred so that the load is not automatically transferred back to the preferred source upon restoration of voltage.



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- d. The control should be capable of being tested without operating the transfer switches.
- e. Equipped with contacts that can be used to indicate position of switches, whether a source is energized, local/supervisory switch.
- f. Equipped with SCADA interface that allows for remote opening and closing of source switches.

**D.2.4.2 Fault Interruption**

The controls shall have the following characteristics:

- a. Phase and ground trip (minimum trip) settings shall be adjustable.
- b. Phase and ground instantaneous trip settings shall be adjustable.
- c. Selectable instantaneous and time overcurrent operating curves.
- d. Selectable time delay.
- e. Breakers shall have the capability of being manually operated.
- f. No external source of control power shall be required for protective functions.
- g. SCADA compatible via DNP over serial.

**D.2.4.3 Auxiliary Switches**

The source vacuum switches, and VFIs shall be provided with two stage "a" and two stage "b" auxiliary switches for the purpose of remote indication of status. The auxiliary switches shall be linked to the movable contact rod of the vacuum switch/VFI and shall be internally pre-wired to a MIL C-5015 style circular power connector receptacle, mounted on the front plate. The receptacle shall be provided with a mating plug for user's cable termination. These auxiliary switches shall be rated for 15 amps @ 120 Vac / 1 amp @ 125 Vdc.

**D.2.5 Terminations**

15 kV, 600 A. dead-break Push-OP apparatus bushings per ANSI/ IEEE Std. 386™-2006 standard installed on both source and tap sides on 600 A. switches.

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Bidder shall furnish catalog cuts of equipment to be supplied along with model numbers and any modifications of standard equipment with bid package by bid-opening deadline.

**D.2.7 Instruction Books**

- a. Three complete instructions books for each unit shall be supplied and shall include:
1. Detailed operating instructions.
  2. Wiring schematics and assembly drawings.
  3. A list of replacement parts.
- b. Detailed schematic wiring and assembly drawings shall be supplied with each unit in the form of pdf files printable at 24" x 36".
- c. Instruction manuals and drawings shall be sent/mailed to:

**Attn: Steve Chwalik**  
**Cleveland Public Power**  
**1300 Lakeside Avenue**  
**Cleveland, OH 44114**  
[sachwalik@cpp.org](mailto:sachwalik@cpp.org)

**D.2.8 Applicable Standards**

- a. IEEE Std. C57.12.28™-2005 standard – Standard for Pad-Mounted Equipment - Enclosure Integrity
- b. IEEE Std. C57.12.29™-2005 standard – IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments – applicable when stainless steel construction is specified.
- c. IEEE Std. 386™-2006 standard – Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V
- d. IEEE Std. C37.90™-2005 standard – IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus
- e. IEEE Std. C37.90.2™-2004 standard – Standard for Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

**D.3 PADMOUNTED DISTRIBUTION SWITCHGEAR (Group 5)**

This equipment is to consist of a dead-front padmounted enclosure and is to be capable of automatic interruption of faults up to 12 kA without the use of fuses or any expendable elements.

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**D.3.1 Construction**

- a. Enclosure to be preassembled and contain all necessary equipment. Unit is to be completely wired and require only the connection of incoming and outgoing cables.
- b. Padmounted enclosure constructed of heavy gauge 100% stainless-steel, with provisions for lifting.
- c. Enclosure is to have tamper resistant swing up style doors, secured with recessed penta-head bolts, with provisions for padlocking. Equipment shall be designed to allow all doors to be opened at once. Door hinge pins shall be constructed of stainless steel.
- d. The unit shall be supplied with an oil drain valve with sampling device, oil fill plug and oil level indicators.
- e. A hotstick operable automatic pressure relief device shall be provided.
- f. A 0.5-inch copper ground bar shall be provided across the entire width of the cable compartments. A minimum of two ground pads shall also be provided.
- g. Equipment is to be completely dead-front with no exposed high voltage components.
- h. CPP to choose at the time of placing orders:
  - 1. Painted green to match padmounted transformers per ANSI C57.12.28
  - 2. or Un-painted (bare stainless steel) units

**D.3.2 Switch**

- a. General
  - 1. Manually Operable
  - 2. Pad-lockable in open or closed positions
  - 3. Equipped with operations counter
  - 4. Three phase operation
  - 5. Vacuum Insulated
  - 6. In compliance with ANSI C37
- b. Ratings
  - 1. Rated Continuous Current 600 A.
  - 2. Momentary and fault close rating (asym.) 20 kA

**D.3.3 Breaker**

- a. General
  - 1. Three phase, with three phase tripping.

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- 2. Manually operable
- 3. Equipped with operations counter
- 4. Vacuum insulated
- 5. Mechanically trip free
- 6. In compliance with ANSI C37.60

b. Ratings

- |   |        |
|---|--------|
| 1. Rated Continuous Current                 | 600 A. |
| 2. Rated Interrupting Current               | 12 kA. |
| 3. Momentary and fault close rating (asym.) | 20 kA. |
| 4. Rated 3-Second Current (rms Sym.)        | 12 kA. |

**D.3.4 Controls**

The controls shall have the following characteristics:

- a. Phase and ground trip (minimum trip) settings shall be field selectable, 50 A. to 400 A. minimum range.
- b. Phase and ground instantaneous tripping, adjustable based on multiplier of minimum trip setting.
- c. Separate phase and ground, user changeable modules to select time current operating curve.
- d. Minimum response time accessory, to delay breaker operation.
- e. Breakers shall have the capability of being manually operated.
- f. No external source of control power shall be required for protective functions.
- g. Equipped with SCADA accessory providing status outputs for remote indication of phase and ground over-current targets.

**D.3.5 Auxiliary Switches**

The source vacuum switches, and VFIs shall be provided with two stage "a" and two stage "b" auxiliary switches for the purpose of remote indication of status. The auxiliary switches shall be linked to the movable contact rod of the vacuum switch/VFI and shall be internally pre-wired to a MIL C-5015 style circular power connector receptacle, mounted on the front plate. The receptacle shall be provided with a mating plug for user's cable termination. These auxiliary switches shall be rated for 15 amps @ 120 Vac / 1 amp @ 125 Vdc.

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## HIGH VOLTAGE SWITCHING EQUIPMENT 2024

**D.3.6 Terminations**

15 kV, 600 A. dead-break Push-OP apparatus bushings per ANSI/ IEEE Std. 386™-2006 standard installed on both source and tap sides on 600 A. switches.

**D.3.7 Required Information**

Bidder shall furnish catalog cuts of equipment to be supplied along with model numbers and any modifications of standard equipment with bid package by bid-opening deadline.

**D.3.8 Instruction Books**

a. Three complete instructions books for each unit shall be supplied and shall include:

1. Detailed operating instructions.
2. Wiring schematics and assembly drawings.
3. A list of replacement parts.

b. Detailed schematic wiring and assembly drawings shall be supplied with each unit in the form of pdf files printable at 24" x 36".

c. Instruction manuals and drawings shall be sent/emailed to:

**Attn: Steve Chwalik**  
**Cleveland Public Power**  
**1300 Lakeside Avenue Cleveland, OH 44114**  
**sachwalik@cpp.org**

**D.3.9 Applicable Standards**

a. IEEE Std. C37.74™-2003 standard – IEEE Standard Requirements for Subsurface, Vault, and Pad-Mounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems Up to 38 Kv.

b. IEEE Std. C37.60™-2003 standard – IEEE Standard Requirements for Overhead, Pad-Mounted, Dry Vault, and Submersible Automatic Circuit Reclosers and Fault Interrupters for Alternating Current Systems Up to 38 kV.

c. IEEE Std. C57.12.28™-2005 standard – Standard for Pad-Mounted Equipment - Enclosure Integrity.

d. IEEE Std. C57.12.29™-2005 standard – IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity for Coastal Environments – applicable when stainless steel construction is specified.

e. IEEE Std. 386™-2006 standard – Standard for Separable Insulated Connector Systems for Power Distribution Systems Above 600 V.

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f. IEEE Std. C37.90™-2005 standard – IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.

g. IEEE Std. C37.90.2™-2004 standard – Standard for Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers.

**D-4 Submersible 15 kV Transfer Switch (Group 6)**

The items in this group are to be "Turnkey Package Systems" (i.e. switch complete with all appropriate controls, accessories, and terminations.)

This equipment is to consist of a submersible, self-powered, dead-front submersible automatic transfer switch with 12 kA fault interrupting capability. This equipment shall also include but not be limited to the appropriate Controls, Potential Transformers + Current Transformers.

For 200A units, the equipment is to be equivalent to:

- Kearney VACpac Model No. 33VP95-222-16T
- Cooper Power Series VACpac Model No. 33VP95-222-SIS
- See Appendix "A" for material describing in part some existing installations.

For 600A units, the equipment is to be equivalent to:

- Kearney VACpac Model No. 33VP95-666-16T
- Cooper Power Series VACpac Model No. 33VP95-666-SIS
- See Appendix "A" for material describing in part some existing installations.

**D.4.1 Construction**

a. Three phase, with two source switches implementing the automatic transfer function and one 12 kA interrupter on the tap providing overcurrent protection.

b. Vacuum interrupters

c. Stainless Steel Construction

d. Positive color-coded "OPEN" – "CLOSED" contact position indicator.

e. Hot-stick operable handle with padlock provisions on tap

f. Dimensionally smaller than 27" L x 27" W x 28" H

g. Equipped with parking stand brackets

**D.4.2 Automatic Transfer**

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Three phase open delta voltage sensing on both the preferred and alternate source.  
Phase loss and unbalance detection to initiate transfer from one source to another.  
Adjustable time delays for preferred to alternate and alternate to preferred transitions.  
User selectable manual and automatic restoration modes.

Manual operating mode allowing manual control over source switches.

Powered by open delta voltage transformers supplied for voltage sensing.

To include all instrument transformers and inter-connecting cables.

**D.4.3 Fault Interruption**

Fault information detected by time and instantaneous phase and ground overcurrent relays supplied by 200:5 or 400:5 current transformers as necessary. Fault interruption by a 12 kA manually reset interrupter installed on the tap position. Powered by open delta voltage transformers supplied for voltage sensing and a capacitor trip device.

All units are to include all instrument transformers and inter-connecting cables.

**D.4.4 Electrical Ratings****D.4.4.1 Switch Ratings**

## Voltage Ratings

a. Max. Voltage	15.5 kV
b. Impulse Level (BIL)	95 kV
c. One Minute Withstand	34 kVac
d. 15 minute Withstand	53 kVdc

## Current Ratings

a. Continuous Current	200 A. 600 A.
b. Load Break Current	200 A. 600 A.
c. Momentary Current	20 kA (asym)
d. Fault Close Current	20 kA (asym)

**D.4.4.2 Interrupter Ratings**

## Voltage Ratings

a. Max. Voltage	15.5 kV
b. Impulse Level (BIL)	95 kV
c. One Minute Withstand	34 kVac

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d. 15 minute Withstand Current Ratings	53 kVdc
a. Continuous Current	200 A. 600 A.
b. Load Break Current	12 kA
c. Momentary Current	20 kA (asym)
d. Fault Close Current	20 kA (asym)

**D.4.5 Required Information**

Bidder shall furnish catalog cuts of equipment to be supplied along with model numbers and any modifications of standard equipment with bid package by bid-opening deadline.

**D.4.6 Instruction Books**

a. Three complete instructions books for each unit shall be supplied and shall include:

1. Detailed operating instructions.
2. Wiring schematics and assembly drawings.
3. A list of replacement parts.

b. Detailed schematic wiring and assembly drawings shall be supplied with each unit in the form of pdf files printable at 24" x 36".

c. Instruction manuals and drawings shall be sent/emailed to:

**Steve Chwalik**  
**Cleveland Public Power**  
**1300 Lakeside Avenue Cleveland, OH 44114**  
[sachwalik@cpp.org](mailto:sachwalik@cpp.org)

**D.4.7 Standards**

a. The interrupter shall meet the applicable requirements of ANSI C37.60, ANSI C37.71, ANSI C37.72, ANSI/IEEE 386 and IEEE Std. 592.

**D.4.8**

a. Equipment is to meet all applicable ANSI, NEMA AND IEEE standard.

**D.5. Padmount Switchgear Accessories (Group 7)**

Threadless, deadbreak, hotstick operable connectors for terminating underground cables to padmounted switchgear. Fully shielded, submersible, meeting the requirements of IEEE Std.



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**HIGH VOLTAGE SWITCHING EQUIPMENT 2024**

386™ standard for Separable Insulated Connector Systems. Supplied with capacitive test point.

Voltage Ratings and Characteristics

<u>Description</u>	<u>kV</u>
Standard Voltage Class	15
Maximum Rating Phase-to-Phase (Loadbreak Reducing Tap Plug only)	14.4
Maximum Rating Phase-to-Ground	8.3
ac 60 Hz 1 Minute Withstand	34
dc 15 Minute Withstand	53
BIL and Full Wave Crest	95
Minimum Partial Discharge Extinction Voltage	11

Current Ratings and Characteristics

<u>Description</u>	<u>Amperes</u>
600 A. Interface	
Continuous	600 A rms (Aluminum) 900 A rms (Copper)
24 Hour Overload	900 A rms (Aluminum) 1,200 A rms (Copper)
Short Time	25,000 A rms symmetrical for 0.20 s
Short Time	10,000 A rms symmetrical for 4.0 s
200 A. Interface	
Continuous Switching	200 A rms
	10 operations at 200 A rms at 14.4 kV phase-to-phase
Fault Closure	10,000 A rms symmetrical at 14.4 kV phase-to-phase for 0.17 s after 10 switching operations
Short Time	10,000 A rms symmetrical for 0.17 s 3,500 A rms symmetrical for 3.0 s

Voltage and Current ratings and characteristics are in accordance with IEEE Std. 386™-2006 standard.

**D.6 Submersible Switches and Interrupters (Group 8)**

**D.6.1 Single Phase Interrupter**

**D.6.1.1 Description**

Vacuum interrupter, spring operated mechanism, EDPM insulation, programmable, electronic self-powered control, field programmable TCC curve and trip settings, parking stand between bushings. Built to ANSI C37.60 and IEEE 386.

**D.6.1.2 Interrupter Ratings**

Voltage Ratings	
a. Voltage Class	15 kV
b. Max. Voltage	17 kV

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b. Impulse Level (BIL)	95 kV
c. One Minute Withstand	34 kVac
d. 15 minute Withstand	53 kVdc

Current Ratings

a. Continuous Current Device	200 A.
b. Load Break Current Interrupter	630 A.
c. Symmetrical One Second rating	20 kA (asym)
d. Asym. Fault Close Current	32 kA (asym)

**D.6.2 Three Phase Switch**

**D.6.2.1 Description**

Vacuum interrupters, spring operated mechanism, EDPM insulation, parking stand between bushings. Supplied with visible break. Built to ANSI C37.74 and IEEE 386.

**D.6.2.2 Switch Ratings**

Voltage Ratings

a. Max. Voltage	15.5 kV
b. Impulse Level (BIL)	95 kV
c. One Minute Withstand	34 kVac
d. 15 minute Withstand	53 kVdc

Current Ratings

a. Continuous Current Device	630 A.
b. Load Break Current Interrupter	630 A.
c. Symmetrical One Second rating	20 kA (asym)
d. Asym. Fault Close Current	32 kA (asym)

**D.6.3 Three Phase Interrupter**

**D.6.3.1 Description**

Vacuum interrupters, spring operated mechanism, EDPM insulation, programmable, electronic self-powered control, field programmable TCC curve and trip settings and parking stands between bushings and on mechanism cover. Supplied with visible break. Built to ANSI C37.60 and IEEE 386.

**D.6.3.2 Interrupter Ratings**

Voltage Ratings

a. Voltage Class	15 kV
b. Max. Voltage	17 kV
b. Impulse Level (BIL)	95 kV

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- |                         |         |
|-------------------------|---------|
| c. One Minute Withstand | 34 kVac |
| d. 15 minute Withstand  | 53 kVdc |

**Current Ratings**

- |                                   |              |
|-----------------------------------|--------------|
| a. Continuous Current Device      | 630 A.       |
| b. Load Break Current Interrupter | 630 A.       |
| c. Symmetrical One Second rating  | 20 kA (asym) |
| d. Fault Close Current            | 32 kA (asym) |

**\* End of Section D \***